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EXAMINER	
BATURAY, ALICIA	
ART UNIT	**PAPER NUMBER**
2155	

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/964,977	KRISHNAN ET AL.	
	Examiner	Art Unit	
	Alicia Baturay	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-63* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-63 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 19, 20-22, 39-42, and 59-63 are rejected under 35 U.S.C. 102(e) as being anticipated by Frazier et al. (U.S. 6,941,350).

4. With respect to claim 1, Frazier teaches a computer network having a plurality of nodes each of which has a DDB and one of which should be master node used to maintain contents of the DDB in each of the plurality of nodes consistent throughout the plurality in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, a system for resolving conflict in the network between the first purported master node and the second purported master node comprising:

Means for establishing a standard for comparison between the first purported master node and the second purported master node (Frazier, col. 10, lines 7-10); means for comparing the first purported master node against the second purported master node in accordance with the standard to obtain comparison results (Frazier, col. 11, lines 49-51); and, means for selecting

the master node from the group of nodes consisting of the first purported master node and the second purported master node based on the comparison results (Frazier, col. 12, lines 20-32).

5. With respect to claim 2, Frazier teaches the invention described in claim 1, including the system further comprising:

Means for demoting the remaining node in the group to non-master node status as participating node in the plurality of nodes (Frazier, col. 12, lines 40-46).

6. With respect to claim 19, Frazier teaches a computer network having a plurality of nodes only one of which should be master node for managing the plurality of nodes in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, a system for resolving conflict in the network between the first purported master node and the second purported master node comprising:

Means for choosing between the first purported master node and the second purported master node to obtain the master node (Frazier, col. 10, lines 7-10).

7. With respect to claim 20, Frazier teaches a computer network having a plurality of nodes only one of which should be master node used to maintain the plurality of nodes in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, a system for resolving conflict in the network between the first purported master node and the second purported master node comprising:

Means for establishing a standard for comparison between the first purported master node and the second purported master node (Frazier, col. 10, lines 7-10); means for comparing the first purported master node against the second purported master node in accordance with the standard to obtain comparison results (Frazier, col. 11, lines 49-51); and, means for selecting the master node from the group of nodes consisting of the first purported master node and the second purported master node based on the comparison results (Frazier, col. 12, lines 20-32).

8. With respect to claim 21, Frazier teaches a computer network having a plurality of nodes each of which has a DDB and one of which should be master node used to maintain contents of the DDB in each of the plurality of nodes consistent throughout the plurality in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, a system for resolving conflict in the network between the first purported master node and the second purported master node comprising:

Establishing a standard for comparison between the first purported master node and the second purported master node (Frazier, col. 10, lines 7-10); Comparing the first purported master node against the second purported master node in accordance with the standard to obtain comparison results (Frazier, col. 11, lines 49-51); and, selecting the master node from the group of nodes consisting of the first purported master node and the second purported master node based on the comparison results (Frazier, col. 12, lines 20-32).

9. With respect to claim 22, Frazier teaches the invention described in claim 21, including the method further comprising:

Demoting the remaining node in the group to non-master node status as participating node in the plurality of nodes (Frazier, col. 12, lines 40-46).

10. With respect to claim 39, Frazier teaches a computer network having a plurality of nodes only one of which should be master node for managing the plurality of nodes in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, a method for resolving conflict in the network between the first purported master node and the second purported master node comprising:

Choosing between the first purported master node and the second purported master node to obtain the master node (Frazier, col. 10, lines 7-10).

11. With respect to claim 40, Frazier teaches a computer network having a plurality of nodes only one of which should be master node used to maintain the plurality of nodes in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, a method for resolving conflict in the network between the first purported master node and the second purported master node comprising:

Establishing a standard for comparison between the first purported master node and the second purported master node (Frazier, col. 10, lines 7-10); comparing the first purported master node against the second purported master node in accordance with the standard to obtain comparison results (Frazier, col. 11, lines 49-51); and, selecting the master node from the group of nodes consisting of the first purported master node and the second purported master node based on the comparison results (Frazier, col. 12, lines 20-32).

12. With respect to claim 41, Frazier teaches a computer program product having a plurality of nodes each of which has a DDB and one of which should be master node used to maintain contents of the DDB in each of the plurality of nodes consistent throughout the plurality in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, the computer program product including a computer usable medium having computer readable program code thereon for resolving conflict in the network between the first purported master node and the second purported master node comprising:

Program code for establishing a standard for comparison between the first purported master node and the second purported master node (Frazier, col. 10, lines 7-10); program code for comparing the first purported master node against the second purported master node in accordance with the standard to obtain comparison results (Frazier, col. 11, lines 49-51); and, program code for selecting the master node from the group of nodes consisting of the first purported master node and the second purported master node based on the comparison results (Frazier, col. 12, lines 20-32).

13. With respect to claim 42, Frazier teaches the invention described in claim 41, including the computer program product further comprising:

Program code for demoting the remaining node in the group to non-master node status as participating node in the plurality of nodes (Frazier, col. 12, lines 40-46).

14. With respect to claim 59, Frazier teaches a computer program product for use in a computer network having a plurality of nodes only one of which should be master node for managing the plurality of nodes in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, the computer program product including a computer usable medium having computer readable program code for resolving conflict in the network between the first purported master node and the second purported master node comprising:

Program code for choosing between the first purported master node and the second purported master node to obtain the master node (Frazier, col. 10, lines 7-10).

15. With respect to claim 60, Frazier teaches a computer program product for use in a computer network having a plurality of nodes only one of which should be master node used to maintain the plurality of nodes in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, the computer program product including a computer usable medium having computer readable code for resolving conflict in the network between the first purported master node and the second purported master node comprising:

Program code for establishing a standard for comparison between the first purported master node and the second purported master node (Frazier, col. 10, lines 7-10); program code for comparing the first purported master node against the second purported master node in accordance with the standard to obtain comparison results (Frazier, col. 11, lines 49-51); and, program code for selecting the master node from the group of nodes consisting of the

first purported master node and the second purported master node based on the comparison results (Frazier, col. 12, lines 20-32).

16. With respect to claim 61, Frazier teaches a computer network having a plurality of nodes each of which has a DDB and one of which should be master node used to maintain contents of the DDB in each of the plurality of nodes consistent throughout the plurality in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, apparatus for resolving conflict in the network between the first purported master node and the second purported master node comprising:

A first device that establishes a standard for comparison between the first purported master node and the second purported master node (Frazier, col. 10, lines 7-10); a second device that compares the first purported master node against the second purported master node in accordance with the standard to obtain comparison results (Frazier, col. 10, lines 7-10); and, a third device that selects the master node from the group of nodes consisting of the first purported master node and the second purported master node based on the comparison results (Frazier, col. 10, lines 7-10).

17. With respect to claim 62, Frazier teaches a computer program product for use in a computer network having a plurality of nodes only one of which should be master node for managing the plurality of nodes in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, apparatus

for resolving conflict in the network between the first purported master node and the second purported master node comprising:

A device for choosing between the first purported master node and the second purported master node to obtain the master node (Frazier, col. 10, lines 7-10).

18. With respect to claim 63, Frazier teaches a computer network having a plurality of nodes only one of which should be master node used to maintain the plurality of nodes in a manner to avoid a single point of failure, the plurality of nodes including a first purported master node and a second purported master node, apparatus for resolving conflict in the network between the first purported master node and the second purported master node comprising:

A first device that establishes a standard for comparison between the first purported master node and the second purported master node (Frazier, col. 10, lines 7-10); a second device that compares the first purported master node against the second purported master node in accordance with the standard to obtain comparison results (Frazier, col. 10, lines 7-10); and, a third device that selects the master node from the group of nodes consisting of the first purported master node and the second purported master node based on the comparison results (Frazier, col. 10, lines 7-10).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

20. Claims 3, 4, 23, 24, 43, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frazier and further in view of Quoc et al. (U.S. 6,092,214).

Frazier teaches the invention substantially as claimed including a method in a node within a network computing system for selecting a master network manager. A first node shifts to a standby mode if it discovers a master subnet manager or the second priority is higher than the first priority. The first node shifts to a master mode if a response containing a priority higher than the first priority is absent in responses received by the first node. In the case where the priority received is equal, the comparison is further made in which the node with the lowest globally unique identifier wins the arbitration.

21. With respect to claim 3, Frazier teaches the invention described in claim 1, including means for establishing a standard for comparison between the first purported master node and the second purported master node (Frazier, col. 10, lines 7-10).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

22. With respect to claim 4, Frazier teaches the invention described in claim 3, including the system where the comparing means comprises:

Means for choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35); and, means for determining which one of the first purported master node and the second purported master node was most recently selected to obtain a most recently selected purported master node if the first purported master node and the second purported master node were not selected simultaneously (Frazier, col. 12, lines 20-32).

23. With respect to claim 23, Frazier teaches the invention described in claim 21, including establishing a standard for comparison between the first purported master node and the second purported master node (Frazier, col. 10, lines 7-10).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the method where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process

24. With respect to claim 24, Frazier teaches the invention described in claim 23, including the method where the comparing means comprises:

Choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35); and, determining which one of the first purported master node and the second purported master node was most recently selected to obtain a most recently selected purported master node if the first purported master node and the second purported master node were not selected simultaneously (Frazier, col. 12, lines 20-32).

25. With respect to claim 43, Frazier teaches the invention described in claim 41, including program code for establishing a standard for comparison between the first purported master node and the second purported master node (Frazier, col. 10, lines 7-10).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the computer program product where the comparison standard establishing program code establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

26. With respect to claim 44, Frazier teaches the invention described in claim 43, including the computer program product where the comparing program code comprises:

Program code for choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35); and, program code for determining which one of the first purported master node and the second purported master node was most recently selected to obtain a most recently selected purported master node if the first purported master node and the second purported master node were not selected simultaneously (Frazier, col. 12, lines 20-32).

27. Claims 5-7, and 25-27, and 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frazier in view of Quoc and further in view of Lind (US 2002/0080807).

Frazier teaches the invention substantially as claimed including a method in a node within a network computing system for selecting a master network manager. A first node shifts to a standby mode if it discovers a master subnet manager or the second priority is

higher than the first priority. The first node shifts to a master mode if a response containing a priority higher than the first priority is absent in responses received by the first node. In the case where the priority received is equal, the comparison is further made in which the node with the lowest globally unique identifier wins the arbitration.

28. With respect to claim 5, Frazier teaches the invention described in claim 4, including means for choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

Frazier teaches the invention described including means for choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches a system where the choosing means includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

29. With respect to claim 6, Frazier teaches the invention described in claim 4, including the system where the determining means comprises means for picking the most recently selected purported master node as the master node (Frazier, col. 12, lines 20-32).

30. With respect to claim 7, Frazier teaches the invention described in claim 6, including the system where the determining means comprises means for picking the most recently selected purported master node as the master node (Frazier, col. 12, lines 20-32).

Frazier does not teach determining times when nodes were selected to be master.

However, Quoc teaches the system where the picking means comprises: first means for determining when the first purported master node was selected master of the network to obtain a first time of selection; second means for determining when the second purported master node was selected the master of the network to obtain a second time of selection (Quoc, col. 6, lines 54-57); third means for comparing the first time with the second time to obtain the most recently selected purported master node; and, fourth means, responsive to operation of the third means, for allowing the most recently selected purported master node to be the master node and for demoting other than the most recently selected master node to non-master-node status as a participating node in the plurality of nodes (Quoc, col. 6, line 66 – col. 7, line 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to determine times at which nodes were selected to be master. One would be motivated to do so in order to allow for a comparison between two nodes for purposes of arbitration.

31. With respect to claim 25, Frazier teaches the invention described in claim 24, including choosing between the first purported master node and the second purported master node if

the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

Frazier teaches the invention described including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

32. With respect to claim 26, Frazier teaches the invention described in claim 24, including the method where the determining comprises picking the most recently selected purported master node as the master node (Frazier, col. 12, lines 20-32).

33. With respect to claim 27, Frazier teaches the invention described in claim 6, including the method where the picking means comprises means for picking the most recently selected purported master node as the master node (Frazier, col. 12, lines 20-32).

Frazier does not teach determining times when nodes were selected to be master.

However, Quoc teaches first determining when the first purported master node was selected master of the network to obtain a first time of selection; second determining when the second purported master node was selected the master of the network to obtain a second time of selection (Quoc, col. 6, lines 54-57); third comparing the first time with the second time to obtain the most recently selected purported master node; and, allowing the most

recently selected purported master node to be the master node and for demoting other than the most recently selected master node to non-master-node status as a participating node in the plurality of nodes (Quoc, col. 6, line 66 – col. 7, line 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to determine times at which nodes were selected to be master. One would be motivated to do so in order to allow for a comparison between two nodes for purposes of arbitration.

34. With respect to claim 45, Frazier teaches the invention described in claim 44, including program code for choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

Frazier teaches the invention described including program code for choosing between the first purported master node and the second purported master node if the first purported

master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

35. With respect to claim 46, Frazier teaches the invention described in claim 44, including the computer program product where the determining program code comprises program code for picking the most recently selected purported master node as the master node (Frazier, col. 12, lines 20-32).

36. With respect to claim 47, Frazier teaches the invention described in claim 46, including the computer program product where the picking program code comprises the computer program product where the determining program code comprises program code for picking the most recently selected purported master node as the master node (Frazier, col. 12, lines 20-32).

Frazier does not teach determining times when nodes were selected to be master.

However, Quoc teaches first program code for determining when the first purported master node was selected master of the network to obtain a first time of selection; second program code for determining when the second purported master node was selected the master of the network to obtain a second time of selection (Quoc, col. 6, lines 54-57); third program code for comparing the first time with the second time to obtain the most recently selected purported master node; and, fourth program code, responsive to operation of the third program code, for allowing the most recently selected purported master node to be the master node and for demoting other than the most recently selected master node to non-master-node status as a participating node in the plurality of nodes (Quoc, col. 6, line 66 – col. 7, line 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to determine times at which nodes were selected to be master. One would be motivated to do so in order to allow for a comparison between two nodes for purposes of arbitration.

37. Claims 8, 9, 16, 17, 28, 29, 36, 37, 48, 49, 56, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frazier in view of Quoc in view of Lind and further in view of Michelson et al. (U.S. 6,665,730).

Frazier teaches the invention substantially as claimed including a method in a node within a network computing system for selecting a master network manager. A first node shifts to a standby mode if it discovers a master subnet manager or the second priority is higher than the first priority. The first node shifts to a master mode if a response containing a priority higher than the first priority is absent in responses received by the first node. In the case where the priority received is equal, the comparison is further made in which the node with the lowest globally unique identifier wins the arbitration.

38. With respect to claim 8, Frazier teaches the invention described in claim 7, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the system where the first means comprises: fifth means, included within the first purported master node for recording first purported master node local time of selection of the first purported master node as the master node as recorded the first time of selection, for measuring duration of the selection of the first purported master

node to obtain a first selection duration, and for communicating the first selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

39. With respect to claim 9, Frazier teaches the invention described in claim 8, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first

purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the system where the second means comprises sixth means, included within the second purported master node for recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection, for measuring duration of the selection of the second purported master node to obtain a second selection duration, and for communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

40. With respect to claim 16, Frazier teaches the invention described in claim 8, including the system where the fifth means includes means for communicating via the DDB in the first purported master node to the DDB in each of the all other of the nodes in the plurality (Frazier, col. 12, lines 23-29).

41. With respect to claim 17, Frazier teaches the invention described in claim 9, including the system where the sixth means includes means for communicating via the DDB in the second purported master node to the DDB in each of the all other of the nodes in the plurality (Frazier, col. 12, lines 23-29).

42. With respect to claim 28, Frazier teaches the invention described in claim 27, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node

However, Michelson teaches the method where the first means comprises recording first purported master node local time of selection of the first purported master node as the master node as recorded the first time of selection; measuring duration of the selection of the first purported master node to obtain a first selection duration; and communicating the first selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

43. With respect to claim 29, Frazier teaches the invention described in claim 28, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the method where the second means comprises recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection; measuring duration of the selection of the second purported master node to obtain a second selection duration; and, communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

44. With respect to claim 36, Frazier teaches the invention described in claim 28, including the method where communicating via the DDB in the first purported master node to the DDB in each of the all other of the nodes in the plurality (Frazier, col. 12, lines 23-29).

45. With respect to claim 37, Frazier teaches the invention described in claim 29, including the method where communicating via the DDB in the second purported master node to the DDB in each of the all other of the nodes in the plurality (Frazier, col. 12, lines 23-29).

46. With respect to claim 48, Frazier teaches the invention described in claim 47, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

However, Michelson teaches the computer program product where the first program code comprises fifth program code, included within the first purported master node for recording first purported master node local time of selection of the first purported master node as the master node as recorded the first time of selection, for measuring duration of the selection of the first purported master node to obtain a first selection duration, and for communicating the first selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

47. With respect to claim 49, Frazier teaches the invention described in claim 48, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal

standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the computer program product where the second program code comprises sixth program code, included within the second purported master node for recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection, for measuring duration of the selection of the second purported master node to obtain a second selection duration, and for communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in

order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

48. With respect to claim 56, Frazier teaches the invention described in claim 48, including the computer program product where the fifth program code includes program code for communicating via the DDB in the first purported master node to the DDB in each of the all other of the nodes in the plurality (Frazier, col. 12, lines 23-29).

49. With respect to claim 57, Frazier teaches the invention described in claim 49, including the computer program product where the sixth program code includes program code for communicating via the DDB in the second purported master node to the DDB in each of the all other of the nodes in the plurality (Frazier, col. 12, lines 23-29).

50. Claims 10-15, and 30-35, and 50-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frazier in view of Quoc in view of Lind in view of Michelson and further in view of Bodnar et al. (U.S. 6,295,541).

Frazier teaches the invention substantially as claimed including a method in a node within a network computing system for selecting a master network manager. A first node shifts to a standby mode if it discovers a master subnet manager or the second priority is

higher than the first priority. The first node shifts to a master mode if a response containing a priority higher than the first priority is absent in responses received by the first node. In the case where the priority received is equal, the comparison is further made in which the node with the lowest globally unique identifier wins the arbitration.

51. With respect to claim 10, Frazier teaches the invention described in claim 9, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the method where the second means comprises recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection; measuring duration of the selection of the second purported master node to obtain a second selection duration; and, communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

The combination of Frazier, Quoc, Lind and Michelson does not explicitly teach conversion of times to a common time.

However, Bodnar teaches seventh means, for noting local time of receipt of communication of the first selection duration and for subtracting the first selection duration

from the local time of receipt of the first selection duration to obtain first adjusted local time; eighth means for noting local time of receipt of communication of the second selection duration and for subtracting the second selection duration from the local time of receipt of the second selection duration to obtain second adjusted local time; ninth means for comparing the first adjusted local time and the second adjusted local time to determine most recent adjusted local time (Bodnar, col. 25, line 53 - col. 26, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, Lind and Michelson in view of Bodnar in order to enable the conversion of times to a common time. One would be motivated to do so in order to compare timestamps from different clients during conflict resolution.

52. With respect to claim 11, Frazier teaches the invention described in claim 10, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal

standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the method where the second means comprises recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection; measuring duration of the selection of the second purported master node to obtain a second selection duration; and, communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be

motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

The combination of Frazier, Quoc, Lind and Michelson does not explicitly teach conversion of times to a common time.

However, Bodnar teaches eleventh means located within the first purported master node comprising: twelfth means for noting local time of arrival of the second selection duration and for subtracting the second selection duration to obtain first purported master node adjusted competitive local time (Bodnar, col. 25, line 53 - col. 26, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, Lind and Michelson in view of Bodnar in order to enable the conversion of times to a common time. One would be motivated to do so in order to compare timestamps from different clients during conflict resolution.

53. With respect to claim 12, Frazier teaches the invention described in claim 11, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do

so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the method where the second means comprises recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection; measuring duration of the selection of the second purported master node to obtain a second selection duration; and, communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

The combination of Frazier, Quoc, Lind and Michelson does not explicitly teach conversion of times to a common time.

However, Bodnar teaches fifteenth means located within the second purported master node comprising; sixteenth means for noting local time of arrival of the first selection duration and for subtracting the first selection duration to obtain second purported master node adjusted competitive local time; seventeenth means for comparing the second purported master node adjusted competitive local time with the second purported master node local time of selection to obtain a second most recent selection time (Bodnar, col. 25, line 53 - col. 26, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, Lind and Michelson in view of Bodnar in order to enable the conversion of times to a common time. One would be motivated to do so in order to compare timestamps from different clients during conflict resolution.

54. With respect to claim 13, Frazier teaches the invention described in claim 12, including choosing between the first purported master node and the second purported master node if

the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach counting the number of times each master node is identified.

However, Quoc teaches the system further comprising: summation means, operative with the tenth means, the fourteenth means and the eighteenth means for tallying the number of times the first purported master node is identified to obtain a first total and the number of times the second purported master node is identified to obtain a second total; if the first total equals the second total, tiebreaking means for choosing between the first purported master node and the second purported master node (Quoc, col. 7, line 61 – col. 8, line 8); and, if the first total does not equal the second total, final master node selection means for selecting the first purported master node as master node if the first total is greater than the second total and for selecting the second purported master node as master node if the second total is greater than the first total (Quoc, col. 6, line 66 – col. 7, line 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable counting the number of times each master node is identified. One would be motivated to do so in order to facilitate arbitration between two nodes claiming to be the master node.

55. With respect to claim 14, Frazier teaches the invention described in claim 13, including choosing between the first purported master node and the second purported master node if

the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the system where the tiebreaking means include other IP means for picking the first purported master node as the master node if the IP address of the first purported node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

56. With respect to claim 15, Frazier teaches the invention described in claim 13, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach demoting the node which has the lesser of the total identifications.

However, Quoc teaches the system where the final master node selection means includes demoting means for demoting the first purported master node to non-master node status as a participating node within the plurality of nodes if the first total is less than the second total, and for demoting the second purported master node to non-master node status as a participating node within the plurality of nodes if the second total is less than the first total (Quoc, col. 6, line 66 – col. 7, line 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable counting the number of times each master node is identified. One would be motivated to do so in order to facilitate arbitration between two nodes claiming to be the master node.

57. With respect to claim 30, Frazier teaches the invention described in claim 29, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the method where the second means comprises recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection; measuring duration of the selection of the second purported master node to obtain a second selection duration; and, communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

The combination of Frazier, Quoc, Lind and Michelson does not explicitly teach conversion of times to a common time.

However, Bodnar teaches noting local time of receipt of communication of the first selection duration and for subtracting the first selection duration from the local time of

receipt of the first selection duration to obtain first adjusted local time; noting local time of receipt of communication of the second selection duration and for subtracting the second selection duration from the local time of receipt of the second selection duration to obtain second adjusted local time; comparing the first adjusted local time and the second adjusted local time to determine most recent adjusted local time (Bodnar, col. 25, line 53 - col. 26, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, Lind and Michelson in view of Bodnar in order to enable the conversion of times to a common time. One would be motivated to do so in order to compare timestamps from different clients during conflict resolution.

58. With respect to claim 31, Frazier teaches the invention described in claim 30, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal

standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the method where the second means comprises recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection; measuring duration of the selection of the second purported master node to obtain a second selection duration; and, communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be

motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

The combination of Frazier, Quoc, Lind and Michelson does not explicitly teach conversion of times to a common time.

However, Bodnar teaches noting local time of arrival of the second selection duration and for subtracting the second selection duration to obtain first purported master node adjusted competitive local time; comparing the first purported master node adjusted competitive local time with the first purported master node local time of selection to obtain a first most recent selection time (Bodnar, col. 25, line 53 - col. 26, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, Lind and Michelson in view of Bodnar in order to enable the conversion of times to a common time. One would be motivated to do so in order to compare timestamps from different clients during conflict resolution.

59. With respect to claim 32, Frazier teaches the invention described in claim 31, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do

so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the method where the second means comprises recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection; measuring duration of the selection of the second purported master node to obtain a second selection duration; and, communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

The combination of Frazier, Quoc, Lind and Michelson does not explicitly teach conversion of times to a common time.

However, Bodnar teaches noting local time of arrival of the first selection duration and for subtracting the first selection duration to obtain second purported master node adjusted competitive local time; comparing the second purported master node adjusted competitive local time with the second purported master node local time of selection to obtain a second most recent selection time (Bodnar, col. 25, line 53 - col. 26, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, Lind and Michelson in view of Bodnar in order to enable the conversion of times to a common time. One would be motivated to do so in order to compare timestamps from different clients during conflict resolution.

60. With respect to claim 33, Frazier teaches the invention described in claim 32, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach counting the number of times each master node is identified.

However, Quoc teaches tallying the number of times the first purported master node is identified to obtain a first total and the number of times the second purported master node is identified to obtain a second total; if the first total equals the second total, tiebreaking by choosing between the first purported master node and the second purported master node (Quoc, col. 7, line 61 – col. 8, line 8); and, if the first total does not equal the second total, final master node selection selecting the first purported master node as master node if the first total is greater than the second total and for selecting the second purported master node as master node if the second total is greater than the first total (Quoc, col. 6, line 66 – col. 7, line 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable counting the number of times each master node is identified. One would be motivated to do so in order to facilitate arbitration between two nodes claiming to be the master node.

61. With respect to claim 34, Frazier teaches the invention described in claim 33, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the tiebreaking by choosing includes picking the first purported master node as the master node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

62. With respect to claim 35, Frazier teaches the invention described in claim 33, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach demoting the node which has the lesser of the total identifications.

However, Quoc teaches the method where demoting the first purported master node to non-master node status as a participating node within the plurality of nodes if the first total is less than the second total; and, demoting the second purported master node to non-master node status as a participating node within the plurality of nodes if the second total is less than the first total (Quoc, col. 6, line 66 – col. 7, line 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable counting the number of times each master node is identified. One would be motivated to do so in order to facilitate arbitration between two nodes claiming to be the master node.

63. With respect to claim 50, Frazier teaches the invention described in claim 49, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal

standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the method where the second means comprises recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection; measuring duration of the selection of the second purported master node to obtain a second selection duration; and, communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be

motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

The combination of Frazier, Quoc, Lind and Michelson does not explicitly teach conversion of times to a common time.

However, Bodnar teaches seventh program code, for noting local time of receipt of communication of the first selection duration and for subtracting the first selection duration from the local time of receipt of the first selection duration to obtain first adjusted local time; eighth program code for noting local time of receipt of communication of the second selection duration and for subtracting the second selection duration from the local time of receipt of the second selection duration to obtain second adjusted local time; ninth program code for comparing the first adjusted local time and the second adjusted local time to determine most recent adjusted local time (Bodnar, col. 25, line 53 - col. 26, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, Lind and Michelson in view of Bodnar in order to enable the conversion of times to a common time. One would be motivated to do so in order to compare timestamps from different clients during conflict resolution.

64. With respect to claim 51, Frazier teaches the invention described in claim 50, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the method where the second means comprises recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection; measuring duration of the selection of the second purported master node to obtain a second selection duration; and,

communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

The combination of Frazier, Quoc, Lind and Michelson does not explicitly teach conversion of times to a common time.

However, Bodnar teaches eleventh program code located within the first purported master node comprising: twelfth program code for noting local time of arrival of the second selection duration and for subtracting the second selection duration to obtain first purported master node adjusted competitive local time; thirteenth program code for comparing the first purported master node adjusted competitive local time with the first purported master node local time of selection to obtain a first most recent selection time (Bodnar, col. 25, line 53 - col. 26, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, Lind and Michelson in view of Bodnar in order to enable the conversion of times to a common time. One would be motivated to do so in order to compare timestamps from different clients during conflict resolution.

65. With respect to claim 52, Frazier teaches the invention described in claim 51, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the method where the choosing includes IP means for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the choosing program code includes IP program code for picking the first purported node if the IP address of the first purported master node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

The combination of Frazier, Quoc, and Lind does not explicitly teach recording the local time of selection of a master node.

However, Michelson teaches the method where the second means comprises recording second purported master node local time of selection of the second purported master node as the master node as recorded the second time of selection; measuring duration of the selection of the second purported master node to obtain a second selection duration; and, communicating the second selection duration to all other of the nodes in the plurality (Michelson, col. 5, lines 18-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, and Lind in view of Michelson in order to enable recording the local time of selection of a master node. One would be motivated to do so in order to effectively and efficiently route transaction-based messages within the network.

The combination of Frazier, Quoc, Lind and Michelson does not explicitly teach conversion of times to a common time.

However, Bodnar teaches fifteenth program code located within the second purported master node comprising; sixteenth program code for noting local time of arrival of the first selection duration and for subtracting the first selection duration to obtain second purported master node adjusted competitive local time; seventeenth program code for comparing the second purported master node adjusted competitive local time with the second purported master node local time of selection to obtain a second most recent selection time (Bodnar, col. 25, line 53 - col. 26, line 4)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier, Quoc, Lind and Michelson in view of Bodnar in order to enable the conversion of times to a common time. One would be motivated to do so in order to compare timestamps from different clients during conflict resolution.

66. With respect to claim 53, Frazier teaches the invention described in claim 52, including the computer program product further comprising: choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach counting the number of times each master node is identified.

However, Quoc teaches summation program code, operative with the tenth program code, the fourteenth program code and the eighteenth program code for tallying the number of times the first purported master node is identified to obtain a first total and the number of times the second purported master node is identified to obtain a second total; if the first total equals the second total, tiebreaking program code for choosing between the first purported master node and the second purported master node (Quoc, col. 7, line 61 – col. 8, line 8); and, if the first total does not equal the second total, final master node selection program code for selecting the first purported master node as master node if the first total is greater than the second total and for selecting the second purported master node as master node if the second total is greater than the first total (Quoc, col. 6, line 66 – col. 7, line 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable counting the number of times each master node is identified. One would be motivated to do so in order to facilitate arbitration between two nodes claiming to be the master node.

67. With respect to claim 54, Frazier teaches the invention described in claim 53, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach use of a temporal standard.

However, Quoc teaches the system where the comparison standard establishing means establishes a temporal standard (Quoc, col. 7, lines 19-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable the use of a temporal standard. One would be motivated to do so in order to allow the nodes to synchronize after coming out of the initialization process.

The combination of Frazier and Quoc does not explicitly teach the use of IP addresses for settling arbitration between two nodes.

However, Lind teaches the computer program product where the tiebreaking program code includes other IP program code for picking the first purported master node as the master node if the IP address of the first purported node is lower than the IP address of the second purported master node and vice versa (Lind, pages 2-3, paragraph 32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Frazier and Quoc in view of Lind in order to enable the use of IP addresses to settle arbitration between two nodes. One would be motivated to do so in order to utilize the IP addresses of the nodes on the network to designate a master node and slave nodes.

68. With respect to claim 55, Frazier teaches the invention described in claim 53, including choosing between the first purported master node and the second purported master node if the first purported master node and the second purported master node were selected simultaneously (Frazier, col. 10, lines 27-35).

Frazier does not explicitly teach demoting the node which has the lesser of the total identifications.

However, Quoc teaches the computer program product where the final master node selection program code includes demoting program code for demoting the first purported master node to non-master node status as a participating node within the plurality of nodes if the first total is less than the second total, and for demoting the second purported master node to non-master node status as a participating node within the plurality of nodes if the second total is less than the first total (Quoc, col. 6, line 66 – col. 7, line 53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Quoc in order to enable counting the number of times each master node is identified. One would be motivated to do so in order to facilitate arbitration between two nodes claiming to be the master node.

69. Claims 18, 38, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frazier and further in view of Logan et al. (U.S. 5,968,121).

Frazier teaches the invention substantially as claimed including a method in a node within a network computing system for selecting a master network manager. A first node shifts to a standby mode if it discovers a master subnet manager or the second priority is higher than the first priority. The first node shifts to a master mode if a response containing a priority higher than the first priority is absent in responses received by the first node. In the case where the priority received is equal, the comparison is further made in which the node with the lowest globally unique identifier wins the arbitration.

70. With respect to claim 18, Frazier teaches the invention described in claim 1, including means for selecting the master node from the group of nodes consisting of the first purported master node and the second purported master node based on the comparison results (Frazier, col. 12, lines 20-32).

Frazier does not explicitly teach the nodes existing in differing time zones.

However, Logan teaches the system where the network is globally-dispersed and at least some of the plurality of nodes are located in different times zones from other of the plurality of nodes (Logan, Fig. 2; col. 6, lines 32-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Logan in order to allow for nodes existing in differing

time zones. One would be motivated to do so in order to enable nodes at disparate locations to communicate.

71. With respect to claim 38, Frazier teaches the invention described in claim 21, including selecting the master node from the group of nodes consisting of the first purported master node and the second purported master node based on the comparison results (Frazier, col. 12, lines 20-32).

Frazier does not explicitly teach the nodes existing in differing time zones.

However Logan teaches the method where the network is globally-dispersed and at least some of the plurality of nodes are located in different times zones from other of the plurality of nodes (Logan, Fig. 2; col. 6, lines 32-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Logan in order to allow for nodes existing in differing time zones. One would be motivated to do so in order to enable nodes at disparate locations to communicate.

72. With respect to claim 58, Frazier teaches the invention described in claim 41, including program code for selecting the master node from the group of nodes consisting of the first purported master node and the second purported master node based on the comparison results (Frazier, col. 12, lines 20-32).

Frazier does not explicitly teach the nodes existing in differing time zones.

However, Logan teaches the computer program product where the network is globally-dispersed and at least some of the plurality of nodes are located in different times zones from other of the plurality of nodes (Logan, Fig. 2; col. 6, lines 32-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frazier in view of Logan in order to allow for nodes existing in differing time zones. One would be motivated to do so in order to enable nodes at disparate locations to communicate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Baturay whose telephone number is (571) 272-3981. The examiner can normally be reached at 7:30am - 5pm, Monday - Thursday, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alicia Baturay
September 19, 2005

SALEH NAJJAR
PRIMARY EXAMINER